

REMARKS

Claims 1-35 are pending in this application. Claims 1-35 are rejected. Claims 1, 8, 9, 12, 14, 27 and 31 are amended hereby.

Responsive to the telephonic interview summary mailed December 8, 2004, Applicants respectfully concur with the Examiner's substance of interview summary. Additionally, regarding claim 10, the Examiner suggested that if Applicants provide some additional explanation of claim 10 regarding the element "a thickened bead" that no amendment to claim 10 is necessary. Applicants respectfully direct the Examiner's attention to Figs. 9 and/or 16 which each show, at reference characters 30A and 16, respectively, a thickened bead with an internal diameter which is smaller than an internal diameter of the remaining flexible press cover, for example.

In the interview, the Examiner has indicated claims 12 and 14, and claim 13 depending therefrom, are allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and with additional clarification with regard to the additional strengthening element, for which courtesy the Examiner is thanked. Applicants have amended claim 12 to include the limitations of claims 10 and 1, and to clarify the additional strengthening element to include at least one additional filament. Claim 13 depends from claim 12. Applicants have amended claim 14 to include the limitations of claim 1, and to clarify the additional strengthening element to include at least one additional filament. For all of the foregoing reasons, Applicant submits that claims 12 and 14, and claim 13 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

With reference to the Examiner's comments in the interview summary regarding claims 8 and 9, Applicants have amended claims 8 and 9 to provide additional clarification of the claimed

subject matter. Applicants respectfully submit that claims 8 and 9 are in allowable form, and are also in condition for allowance, which is hereby respectfully requested..

Responsive to the rejection of claims 1-35 under 35 U.S.C. § 112, second paragraph, Applicants have amended claims 1, 8, 9, 12, 14, 27 and 31, keeping in mind the comments of the Examiner, and submit that claims 1-35 are in allowable form. Regarding the Examiner's assertion that the claims appear to be a literal translation from a foreign document, Applicants respectfully direct the Examiner's attention to Appendix A, attached herewith, which is the literal translation of the claims from a foreign document, which translation was filed with the present application. As can be seen by comparing the claims of Appendix A to the claims of the present application, the claims of the present application have been extensively rewritten to conform to current U.S. practice.

Responsive to the rejection of claims 1-7, 10, 11 and 15-35 under 35 U.S.C. § 103(a) as being obvious by German Patent No. DE 33 38 487 A1 (Hund et al.), Applicants have amended claims 1, 27 and 31, and respectfully traverse the rejection of claims 19-26, and submit that claims 1-7, 10, 11 and 15-35 are now in condition for allowance.

Hund et al. '487 disclose press roll 1 which contains roll shell 6 which is made of an easily deformable material, for example rubber or plastic, and which is rotatable about fixed mount 5 and intended for cooperation with counter roll 2. Roll shell 6 is guided with its inner surface in the region of the pressing point on mount 5 over at least one concave support surface 12 deviating from the circular cylindrical form of the inner surface of roll shell 6, which support surface permits a local deformation of roll shell 6 for adaptation to a circumferential part of counter roll 2. The ends of roll shell 6 are connected in a sealing manner with in each case one round cover 16 mounted to be rotatable on mount 5. This sealing connection contains an annular element

(support ring 17) extending over circumference of cover 16, which is made, for example, of rubber-elastic material and which upon rotary movement of roll shell 6 permits an adaptation of its edge part to the shape of roll shell 6 deviating from the circular shape at the pressing point. This results correspondingly in a gentle guidance and sealing of roll shell 6, which is largely relieved, in particular of forces acting in the axial direction. (Abstract)

In contrast, claim 1, as amended, recites in part: “an additional strengthening element in a form of at least one additional filament in at least one of said first end region and said second end region . . . , said rotatable supporting element having a round shape”. (Emphasis added.)

Applicants submit that such an invention is neither taught, disclosed nor suggested by Hund et al. ‘487 or any of the other cited references, alone or in combination, and has distinct advantages thereover.

In further contrast, claim 27, as amended, recites in part: “an additional strengthening element in a form of at least one additional filament in at least one of said first end region and said second end region . . . a stationary supporting element having a round shape . . .”. (Emphasis added.) Applicants submit that such an invention is neither taught, disclosed nor suggested by Hund et al. ‘487 or any of the other cited references, alone or in combination, and has distinct advantages thereover.

In further contrast, claim 31, as amended, recites in part: “an additional strengthening element in a form of at least one additional filament in at least one of said first end region and said second end region . . . a stationary supporting element having a round shape . . .”. (Emphasis added.) Applicants submit that such an invention is neither taught, disclosed nor suggested by Hund et al. ‘487 or any of the other cited references, alone or in combination, and has distinct advantages thereover.

Hund et al. '487 disclose a press roll which contains a roll shell where the ends of the roll shell are connected in a sealing manner and where the sealing connection contains an annular element extending over the circumference of a cover. However, Hund et al. '487 fails to disclose or suggest an additional strengthening element in a form of at least one additional filament in at least one of the first end region and the second end region. Further, Hund et al. '487 disclose roll shell 6 which permits an adaptation of its edge part to the shape of roll shell 6 deviating from the circular shape at the pressing point. However, the present invention includes supporting element 27, for example, having a round shape which does not permit an adaptation of the edge part to the shape of the roll shell. This is a basis for a good connection between the press cover and the supporting element.

For all of the foregoing reasons, Applicants submit that claims 1, 27 and 31, and claims 2-7, 10, 11, 15-18, 28-30 and 32-35 depending respectively therefrom, are now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 19-26 under 35 U.S.C. § 103(a) as being obvious by German Patent No. DE 33 38 487 A1 (Hund et al.), Applicants respectfully traverse this rejection, and submit that claims 19-26 are now in condition for allowance. Hund et al. '487 fails to disclose or suggest a strengthening ring cast into the flexible press cover. To establish a *prima facie* case of obviousness: 1) the prior art must provide some suggestion or motivation to modify the reference, 2) there must be a reasonable expectation of success and 3) the prior art reference must teach or suggest all the claim limitations (MPEP 2142). As there is no suggestion or motivation in Hund et al. '487 to modify the Hund et al. '487 invention to provide a strengthening ring cast into the flexible press cover, and as Hund et al. '487 is completely silent regarding a

strengthening ring cast into the flexible press cover, Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness.

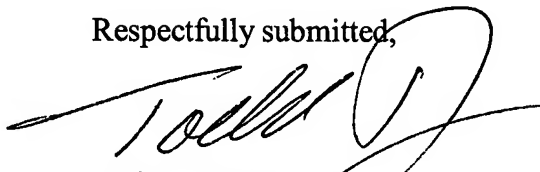
For all of the foregoing reasons, Applicants submit that claim 19, and claims 20-26 depending respectively therefrom, are now in condition for allowance, which is hereby respectfully requested.

For the foregoing reasons, Applicants submit that the pending claims are definite and do particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Moreover, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorizes that any charges be made to Deposit Account No. 20-0095,
TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

Respectfully submitted,



Todd T. Taylor
Registration No. 36,945

Attorney for Applicant

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on: December 24, 2004.

Todd T. Taylor, Reg. No. 36,945

Name of Registered Representative



Signature

December 24, 2004

Date

TTT7/

TAYLOR & AUST, P.C.
142 S. Main Street
P.O. Box 560
Avilla, IN 46710
Telephone: 260-897-3400
Facsimile: 260-897-9300

Enc.: Return postcard

APPENDIX A



WO 03/014469

PCT/EP02/07762

Patent claims

- A, A+1, 2
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- 10
- 15
- 20
- A+3
- 25
- A+4
- 30
- A+5
- 35
1. A flexible press cover (10), which is intended for a shoe press roll - used for dewatering or calendering a moving fibrous web - and which has a plastic layer (30) and, as a strengthening means, a "conventional" reinforcement (31, 32) embedded therein, a woven fabric (37) or a "laid fabric", the laid fabric comprising axially parallel longitudinal filaments (31) and circumferential filaments (32), characterized in that, at least in one of its two end regions (E), the press cover (10) has an additional strengthening means (34) in the form of an additional reinforcement (34, 36, 38, 39'), which makes the press cover suitable to be fixed to a rotatable supporting element ((e.g. spreader ring 27)) of the shoe press roll, (preferably on the outer circumferential surface of the supporting element.)
 2. The flexible press cover as claimed in claim 1, characterized in that the arrangement for fixing the press cover (10) to the aforementioned supporting element (27) is free of fixing elements associated with the circumferential outer surface.
 3. The flexible press cover as claimed in claim 1 or 2, characterized in that the inner circumferential surface of the press cover end region E having the additional strengthening (34) is cylindrical.
 4. The flexible press cover as claimed in claim 1 or 2, characterized in that the inner circumferential surface of the press cover end region having the additional strengthening (34) is conical, with an internal diameter that increases or decreases in the outward direction (figure 5 and, respectively, 6).

A+6
5 5. The flexible press cover as claimed in claim 3 or 4, characterized in that the aforementioned supporting element (27, 27A) can be spread, that is to say enlarged in diameter, as known per se (figures 1 - 4).

A+7
10 6. The flexible press cover as claimed in one of claims 1 to 5, characterized in that the additional reinforcement has circumferential filaments (34; 38) which are wound onto the conventional reinforcement from the outside.

A+15
20 7. The flexible press cover as claimed in one of claims 1 to 6, characterized in that the additional reinforcement has circumferential filaments (36) which are wound onto the conventional reinforcement (32, 35) from the inside (figure 7).

A+9, 10
25 8. The flexible press cover as claimed in one of claims 1 to 7, characterized in that the additional strengthening, (preferably in only one of the two end regions of the press cover (13),) comprises a thickened bead (30A) whose internal diameter is smaller than the internal diameter of the remaining press cover (figures 3, 9).

1/30, 12
35 9. The flexible press cover as claimed in claim 8, characterized in that an additional reinforcement is provided in the bead (30A), (for example axially parallel longitudinal filaments (39) and circumferential filaments (39') wound thereon (figure 9) or a woven fabric.)

A+3
10. The flexible press cover as claimed in one of claims 1 to 7, characterized in that the additional strengthening is formed of additional

circumferential filaments (32') which form a continuation of the conventional circumferential filaments (32), for example with increased winding density and/or increased filament thickness (figure 10).

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A+14, 15
11. The flexible press cover as claimed in one of claims 1 to 5, characterized in that the additional reinforcement has at least one band,
10 (for example a woven fabric band.)

A+16
12. The flexible press cover as claimed in one of claims 1 to 11, characterized in that the end region (E) having the additional strengthening
15 (34) has a greater thickness (d, figure 1) than the adjacent press cover region.

A+17
13. The flexible press cover as claimed in one of claims 1 to 5, characterized in that the additional strengthening means has a strengthening
20 ring (51; 51A; 61; 71, 72) prefabricated from a plastic or a metal.

B+1, +2
14. A flexible press cover (10), which is intended for a shoe press roll - used for dewatering or calendering a moving fibrous web - and which has a plastic layer (30) and, as a strengthening means, a "conventional" reinforcement (31, 32) embedded therein, the press cover (10) having, at least in
30 one of its two end regions (E), an additional strengthening means (34) in the form of a strengthening ring (51; 51A; 61; 71, 72) prefabricated from a plastic or a metal, which makes the press cover suitable to be fixed to a rotatable supporting element ((for example a spreader ring 27)) of the shoe press roll,
35 (preferably on the outer circumferential surface of the supporting element, in particular as claimed

in claim 13,) characterized in that, as viewed in cross section through the strengthening ring, at least part of the strengthening ring is cast into the press cover.

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Bx3

15. The flexible press cover as claimed in claim 14, characterized in that the strengthening ring is anchored in the press cover with the aid of reinforcing filaments (56; 64, 66; 74, 76).

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Bx4

16. The flexible press cover as claimed in claim 14 or 15, characterized in that the strengthening ring (51, 51A) is cast in following the casting of the conventional plastic layer.

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Bx5

17. The flexible press cover as claimed in claim 14 or 15, characterized in that the strengthening ring (61; 71, 72) is cast in at the same time as the conventional plastic layer is cast.

20

Bx6

18. The flexible press cover as claimed in one of claims 13 to 17, characterized in that the strengthening ring has a flange (67 or 68 or, respectively, 71a, 72a) for fixing the press cover to a rotatable supporting element (for example a cover carrying disk 79, 80) belonging to the shoe press roll.

25

C

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19. A shoe press roll, which comprises a flexible press cover constructed in accordance with one of claims 1 to 18 and which, at each end of the roll, has a rotatable cover carrying disk (20) which is mounted on a stationary supporting element, characterized by the following features:

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- a) at least one of the cover carrying disks (20) comprises a clamping ring (24 or 24A) which can be displaced axially on an outer

circumferential surface of the cover carrying disk;

- 5 b) the clamping ring has a conical outer surface which engages in a conical inner surface of a ring (27 or 27A) that can be spread;
- c) the ring that can be spread rests in the cover inner surface of the press cover end region (E) having the additional strengthening (34);
- 10 d) the arrangement is free of fixing elements associated with the press cover outer circumferential surface.

C+1 20. The shoe press roll as claimed in claim 19, characterized in that the clamping ring (24A) can be displaced axially by means of screws (28).

15

C+2 21. The shoe press roll as claimed in claim 19, characterized in that the clamping ring (24) can be displaced axially by means of a hydraulic pressure chamber (25), as known per se.

20

C+3 22. The shoe press roll as claimed in one of claims 19 to 21, characterized in that the spreader ring (27A) has a collar (27B) for the axial fixing of the press cover (figure 4).

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D 23. The shoe press roll according to the preamble of claim 19, characterized in that, at at least one of the ends of the roll; in order to connect the press cover (10B; 10C) to the cover carrying disk (20B; 20'), a mounting ring (40, 40') is provided which, outside the press roll, can be inserted into the press cover end having additional strengthening (34, 34A) and, after that (together with the press cover), can be fixed to the cover carrying disk (figures 5, 6).

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D+1
5 24. The shoe press roll as claimed in claim 23, characterized in that the aforementioned mounting ring (40, 40') has a conical outer circumferential surface matching a conical inner circumferential surface of the press cover end region having the additional strengthening (34; 34A).

D+2
10 25. The shoe press roll as claimed in claim 23, characterized in that the mounting ring has a substantially cylindrical outer circumferential surface.

D+3
15 26. The shoe press roll as claimed in one of claims 23 to 25, characterized in that the mounting ring (40') can be inserted into an end region of the press cover which is tapered conically outward (as claimed in claim 25 or 26) (figure 6).

D+4
20 27. The shoe press roll as claimed in one of claims 23 to 26, characterized in that the mounting ring (40, 40') has a collar for the axial fixing of the press cover.